

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-27 (Canceled)

28. (Previously Presented) A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store a root storage comprising a model directory in the computer readable medium; and

means for enabling said computing unit to store in the computer readable medium at least one model in said model directory, wherein said at least one model is for grouping related elements, is identifiable by a unique identifier, and comprises a control element list having variable sized element chunks containing control elements, and a graphic element list having variable sized element chunks containing graphic elements.

29. (Original) The computer program product of claim 28, further comprising means for enabling said computing unit to store a control model in said root storage, wherein said control model includes a global graphic element list and a global control element list, wherein said global graphic element list contains at least one global element chunk having at least one global graphic element and said global control element list contains at least one global element chunk having at least one global control element.

30. (Original) The computer program product of claim 28, wherein said root storage further comprises at least one of a first stream containing a header, a second stream containing session information, a third stream containing a manifest and a fourth stream containing file properties.

31. (Original) The computer program product of claim 28, wherein at least one element chunk in said graphic element list is compressed.

32. (Original) The computer program product of claim 28, wherein at least one element chunk in said control element list is compressed.

33. (Original) The computer program product of claim 28, wherein at least one element chunk in said graphic element list is encrypted.

34. (Original) The computer program product of claim 28, wherein at least one element chunk in said control element list is encrypted.

35. (Original) The computer program product of claim 28, wherein at least one element chunk in said graphic element list is encrypted and compressed.

36. (Original) The computer program product of claim 28, wherein at least one element chunk in said control element list is encrypted and compressed.

37. (Original) The computer program product of claim 28, wherein said root storage is adapted to be operable with a computer aided design program.

38. (Original) The computer program product of claim 28, wherein said root storage further comprises at least one of a stream and a storage, neither of which are contained in said model directory.

39. (Previously Presented) A computer program product comprising a computer readable medium having computer program logic, the computer program logic comprising:
means for enabling a computer system to store at least one root storage in a storage area;

means for enabling said computer system to store at least one model directory storage in said at least one root storage;

means for enabling said computer system to store at least one model storage in said model directory storage;

means for enabling said computer system to store in said at least one model storage a graphic element list storage having element chunk streams containing variable sized graphic elements and a control element list storage having element chunk streams containing variable sized control elements;

means for enabling said computer system to assign a preselected number of elements to each said element chunk stream;

means for enabling said computer system to allocate each of said preselected number of elements to an element chunk stream in one of said control element list storage and said graphic element list storage.

40. (Previously Presented) The computer program product of claim 39, further comprising:

means for enabling said computer system to compress each element chunk stream;
and

means for enabling said computer system to store at least one compressed element chunk stream in at least one of the graphic element list storage and control element list storage.

41. (Previously Presented) The computer program product of claim 39, further comprising:

means for enabling said computer system to encrypt each element chunk stream; and
means for enabling said computer system to store at least one encrypted element chunk stream in at least one of the graphic element list storage and control element list storage.

42. (Previously Presented) The computer program product of claim 39, further comprising:

means for enabling said computer system to compress and encrypt each element chunk stream; and

means for enabling said computer system to store at least one encrypted and compressed element chunk stream in at least one of the graphic element list storage and the control element list storage.

43. (Original) The computer program product of claim 39, wherein said preselected number is a maximum number.

44. (Previously Presented) The computer program product of claim 39, further comprising:

means for enabling said computer system to create an additional element chunk stream when the number of elements exceeds said preselected number of elements assigned to each element chunk stream;

means for enabling said computer system to assign a preselected number of elements to said additional element chunk stream; and

means for enabling said computer system to store new elements in said additional element chunk stream.

45. (Previously Presented) The computer program product of claim 44, further comprising:

means for enabling said computer system to compress each additional element chunk stream; and

means for enabling said computer system to store at least one additional compressed element chunk in at least one of said graphic element list and said control element list.

46. (Previously Presented) The computer program product of claim 44, further comprising:

means for enabling said computer system to encrypt each additional element chunk stream; and

means for enabling said computer system to store at least one additional encrypted element chunk stream in at least one of said graphic element list storage and said control element list storage.

47. (Previously Presented) The computer program product of claim 44, further comprising:

means for enabling said computer system to compress and encrypt each additional element chunk stream; and

means for enabling said computer system to store at least one additional encrypted and compressed element chunk stream in at least one of said graphic element list storage and said control element list storage.

48. (Original) The computer program product of claim 44, wherein said preselected number is a maximum number.

49. (Original) The computer program product of claim 39, further comprising means for enabling said computer system to associate a header with said at least one root storage.

50. (Original) The computer program product of claim 39, wherein said computer system is the Internet.

51. (Original) The computer program product of claim 39, wherein said computer system is an Intranet.

52. (Original) The computer program product of claim 39, wherein said computer system is a local area network.

53. (Original) The computer program product of claim 39, wherein said storage area is a file.

54. (Original) The computer program product of claim 39, wherein said storage area is adapted to be operable with a computer aided design program.

55. (Original) The computer program product of claim 39, further comprising means for enabling said computer system to store in said root storage at least one of a first stream containing a header, a second stream containing session information, a third stream containing a manifest and a fourth stream containing file properties.

56. (Original) The computer program product of claim 39, further comprising means for enabling said computer system to store at least one of a stream and a storage, neither of which are contained in said model directory, in said root storage.

57. (Previously Presented) The computer program product of claim 39, further comprising:

means for enabling said computer system to store a control model in each root storage;

means for enabling said computer system to store a graphic element list storage and a control element list storage in each control model;

means for enabling said computer system to allocate elements to element chunk streams in said control element list storage and said graphic element list storage; and

means for enabling said computer system to compress each element chunk stream to be stored in said graphic element list storage or said control model list storage in said control model directory.

58. (Previously Presented) A computer readable medium containing a file for storing an element list storage including at least one element chunk stream , wherein said at least one element chunk stream comprises an element chunk header for storing information about the at least one element chunk stream and at least one variable sized element associated with said element chunk header.

59. (Previously Presented) The computer readable medium of claim 58, wherein said element list storage is a graphic element list storage.

60. (Previously Presented) The computer readable medium of claim 58, wherein said element list storage is a control element list storage.

61. (Previously Presented) The computer readable medium of claim 58, wherein said element list storage is a global graphic element list storage.

62. (Previously Presented) The computer readable medium of claim 58, wherein said element list storage is a global control element list storage.

63. (Previously Presented) The computer readable medium of claim 58, wherein said at least one element chunk stream is compressed.

64. (Previously Presented) The computer readable medium of claim 58, wherein said at least one element chunk stream is encrypted.

65. (Previously Presented) The computer readable medium of claim 58, wherein said at least one element chunk stream is encrypted and compressed.

66. (Previously Presented) A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store an element list storage in a storage area;
and

means for enabling a computing unit to store at least one element chunk stream comprising an element chunk header and at least one variable sized element associated with the element chunk header in the element list storage.

67. (Previously Presented) The computer program product of claim 66, wherein said element list storage is a graphic element list storage.

68. (Previously Presented) The computer program product of claim 66, wherein said element list storage is a control element list storage.

69. (Original) The computer program product of claim 66, wherein said element list storage is a global graphic element list storage.

70. (Previously Presented) The computer program product of claim 66, wherein said element list storage is a global control element list storage.

71. (Previously Presented) The computer program product of claim 66, wherein said at least one element chunk stream is compressed.

72. (Previously Presented) The computer product of claim 66, wherein said at least one element chunk stream is encrypted.

73. (Previously Presented) The computer program product of claim 66, wherein said at least one element chunk stream is encrypted and compressed.

74. (Previously Presented) A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store an element list storage in the computer readable medium; and

means for enabling said computing unit to store at least one element chunk stream comprising an element chunk header and at least one element associated with said element chunk header in the element list storage.

75. (Previously Presented) The computer program product of claim 74, wherein said element list storage is a graphic element list storage.

76. (Previously Presented) The computer program product of claim 74, wherein said element list storage is a control element list storage.

77. (Previously Presented) The computer program product of claim 74, wherein said element list storage is a global graphic element list storage.

78. (Previously Presented) The computer program product of claim 74, wherein said element list storage is a global control element list storage.

79. (Previously Presented) The computer program product of claim 74, wherein said at least one element chunk stream is compressed.

80. (Previously Presented) The computer product of claim 74, wherein said at least one element chunk stream is encrypted.

81. (Previously Presented) The computer program product of claim 74, wherein said at least one element chunk stream is encrypted and compressed.

82. (Previously Presented) The computer readable medium of claim 3, wherein the element chunks have unique names within the element lists.

83. (New) A computer readable medium for storing data for access by an application program, comprising:

a file format defining a structure of a file stored in said computer readable medium, the file format including,

elements stored in the computer readable medium, the elements being variable sized data records arranged in a format that can be interpreted by a computer program,

element chunks stored in the computer readable medium, the element chunks being variable sized and including groups of the elements, the element chunks having a unique name and a fixed header including at least one of a number of elements in the element chunk, a compression scheme, or an encryption scheme for the elements,

a model stored in the computer readable medium, the model including groups of related element chunks and a model header stream, the model header stream including at least one of a model name, units, or a geometric range for the model, and

a root storage stored in the computer readable medium, the root storage including at least one model.

84. (New) The computer readable medium of claim 83, further comprising element lists including element chunks classified according to their meaning in the model, the element lists including the unique name for each element chunk in the respective element list.

85. (New) The computer readable medium of claim 84, wherein the elements include control elements having no physical representation and graphic elements having a graphical representation.

86. (New) The computer readable medium of claim 85, wherein the element lists include a graphic element list listing the graphic elements and a control element list listing the control elements.

87. (New) The computer readable medium of claim 83, wherein the element chunks include a fixed number of elements.

88. (New) The computer readable medium of claim 83, further comprising:
a plurality of models; and
a model directory stored in the root storage and including a list of the models, the models having a unique name within their respective model directory.

89. (New) The computer readable medium of claim 83, wherein the root storage further includes a file header stream, a session information stream, a manifest information stream, or a file properties stream stored therein.

90. (New) The computer readable medium of claim 83, further comprising a control model directly stored in the root storage and storing information shared across other models in the root storage.

91. (New) The computer readable medium of claim 83, wherein said root storage further comprises a control model storage containing a control model header, a global control element list storage and a global graphic element list storage, wherein said global control element list storage and said global graphic element list storage contain element chunk including global elements.

92. (New) The computer readable medium of claim 91, wherein said global elements contain information relevant for all models in said model directory storage.

93. (New) The computer readable medium of claim 86, wherein at least one element chunk in said graphic element list is compressed.

94. (New) The computer readable medium of claim 86, wherein at least one element chunk in said control element list is compressed.

95. (New) The computer readable medium of claim 86, wherein at least one element chunk in said graphic element list is encrypted.

96. (New) The computer readable medium of claim 86, wherein at least one element chunk in said control element list is encrypted.

97. (New) The computer readable medium of claim 86, wherein at least one element chunk in said control element list is encrypted and compressed.

98. (New) The computer readable medium of claim 86, wherein at least one element chunk in said graphic element list is encrypted and compressed.

99. (New) A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling said computer system to allocate elements having a variable size to element chunks, the element chunks being variable sized and including groups of the elements, the element chunks having a unique name and a fixed header including at least one of a number of elements in the element chunk, a compression scheme, or an encryption scheme for the elements;

means for enabling said computing unit to store in the computer readable medium at least one model, wherein said at least one model is for grouping related elements, is identifiable by a unique identifier, and comprises a control element list having variable sized element chunks containing control elements, and a graphic element list having variable sized element chunks containing graphic elements; and

means for enabling a computing unit to store a root storage comprising the model in the computer readable medium.

100. (New) The computer program product of claim 99, further comprising:

means for compressing each element chunk stream to be stored in said graphic element list storage or said control model list storage in said control model directory. means for enabling said

computer system to store a graphic element list storage and a control element list storage in each control model.

101. (New) A CAD design file having a file format and stored on a computer readable medium, the CAD design file comprising:

elements representing items of the CAD design, the elements being variable sized data records arranged in a format that can be interpreted by a computer program,

element chunks including groups of the elements, the element chunks having a unique name and a fixed header including at least one of a number of elements in the element chunk, a compression scheme, or an encryption scheme for the elements, the element chunks having a variable size, the groups of elements including control elements having no physical representation and graphic elements having a graphical representation,

a model, the model including groups of related element chunks and a model header stream, the model header stream including at least one of a model name, units, or a geometric range for the model, and

a root storage including at least one model and a control model storing information shared across other models in the root storage.